

Some Insects from Christmas Island, Indian Ocean

Note.—A general collection of insects was made on Christmas Island, Indian Ocean in August and September 1932. The Geometers and Butterflies form the subjects of separate papers (*antea* pp. 88 and 94).

With the exception, perhaps, of the Rhopalocera, it cannot be said to be really representative for any of the Orders. The reason for this is partly that time was not available for intensive entomological work, and partly because the season was unfavourable. A lamp exposed at night attracted very little beyond a few beetles and an occasional moth. On the other hand I was told that during the wet season, December to May, the number and variety of insects attracted to light is enormous.

The present bare list is offered as a small contribution to our knowledge of the fauna of the island. No attempt has been made to collate it with the accounts of the insect groups published in Andrews' "Monograph of Christmas Island" and elsewhere.

The following specialists have very kindly given assistance in the identifications.—

Sir Guy A. K. Marshall, C.M.G., F.R.S. (*Curculionidae*); Messrs. K. G. Blair, G. E. Bryant and H. E. Andrewes (*Coleoptera*); Dr. R. Hanitsch (*Blattidae*); Dr. F. Santschi (*Formicidae*); and Dr. Nathan Banks (*Hemeroobiidae*).

Mr. H. M. Pendlebury kindly identified as much of the material as could be determined from the collections and literature available in the Selangor Museum, Kuala Lumpur. *M. W. F. Tweedie.*

ORTHOPTERA

Blattidae. *Panesthia ruficeps* Kirb. (a local race of *P. javanica* Serv.), *Supella supellectilium* (Serv.), *Leucophaea surinamensis* (L.), *Periplaneta americana* (L.), *Blatta andrewsi* Hanitsch.

Mantidae. *Heirodula dispar* Kirb. (very like *H. bipapilla* Serv. and at most a local race of it).

Phasmidae. Immature specimens found only, probably *Clitumnus stilpnoides* Kirb.

Gryllacridae. *Gryllacris rufovaria* Kirb.; also two immature specimens (♂ and ♀) probably of the same species as the larval forms described by Kirby from the island.

Tettigonidae. *Psyra pomona* Kirb., *Xiphidion maculatum* Guill., *Pseudorhyncus lessoni* Serv.

Acrididae. *Valanga nigricornis disparilis* (Kirb.), *Catantops orientalis* (Kirb.), *Locusta migratoriaoides* Rch. and Frm.

HYMENOPTERA ACULEATA

Eumenidae. *Odynerus polyphemus* Kirb.

Vespidae. *Polistes balder* Kirb.

Apidæ. *Megachile rotundipennis* Kirb., *Megachile nivescens* Kirb.

Formicidae. *Odontomachus haematodes* L., *Solenopsis (Solenopsis) geminata rufa* Jerd., *Paratrechina longicornis* Latr.

NEUROPTERA

Chrysopidae. *Chrysopa esakii* Petersen.

ISOPTERA

Termitidae. *Eutermes* sp.

COLEOPTERA

Passalidae. *Leptaulax timoriensis* Percheron.

Lucanidae. *Paraegus listeri* Gahan.

Carabidae. *Stenolophus* sp.

Coccinellidae. *Chilomenes sexmaculata* F., *Neda 16-notata* F., *Epilachna indica* Muls.

Cleridae. *Dasycoelus* sp.

Eucnemidae. *Galba wallacei* Perr.

Buprestidae. *Chrysodema simplex* Waterh.

Tenebrionidae. *Toxicum antilope* Arr., *Opatrium dubium* Arr., *Setenis carbonaria* Arr., *Bradymerus seminitidus* Arr.

Mordellidae. *Glipa tricolor* Wied.

Oedemeridae. "Sessinia andrewsi" Arr. (This species has been shown to be composite, and the material has not yet been critically examined); *Sessinia listeri* Arr.

Eumolpidæ. *Rhynparida modesta* Gahan.

Cerambycidae. *Ceresium quadrimaculatum* Gahan, *Ceresium nigrum* Gahan, *Examnes affinis* Gahan.

Prionidae. *Prinobius coxalis* Gahan.

Lamiidae. *Monohammus nativitatis* Gahan, *Olenocamptus basalis* Gahan, *Pterolophia perplexa* (Gahan), *Prosoplus banksi* F., *Phelipara subvittata* Blair.

Curculionidae. *Rhabdocnemis fausti* Gahan, *Camptorrhinus crinipes* Gahan.

LEPIDOPTERA HETEROCERA

Sphingidae

Cephonodes picus Cr. 3 ex. *Chromis erotus* Cr. 2 ex.
Hippotion velox F. 5 ex.

Lymantriidae

Porthesia pulvrea Hmps. 10 ex.

Arctiidae

Utetheisa lotrix Cr. 11 ex.

Noctuidæ

Amyna octo Guen. 1. ex. *Amyna punctum* F. 5. ex.
Amyna crocosticta Hmps. 2 ex. *Earias latimargo* Hmps. 1 ex.
Perigea capensis Guen. 2 ex. *Lithacodia griseomixta* Hmps. 3 ex.
Eriopus sp. 2 ex. *Cosmophila erosa* Hbn. 1 ex. *Cosmophila*
vitiensis Btlr. 5 ex. *Ophiusa janata* L. 1 ex. *Ophiusa honesta*
Hbn. 1 ex. *Ophiusa coronata* F. 1 ex. *Oxyodes scrobiculata* F.
1 ex. *Mocis frugalis* F. 11 ex. *Ophideres fullonica* L. 1 ex.
Gesonia sp. 2 ex. *Plusiopalpa chalcytes* Esp. Sch. 1 ex. *Plusio-*
palpa orichalcea F. 1 ex. *Hypena indicatalis* Wlk. 2 ex. *Hypena*
strigatus F. 2 ex. *Bocula limbata* Btlr. 11 ex.

Two further species of Hypeninæ are left undetermined.

Epiplemidæ

Epiplema inhians Warr. 1 ex.

Pyralidæ

Cirrhochrista sp. nr. *annulifera* Hmps. 1 ex.
Euzophera sp. *Endotricha listeri* Btlr. 6 ex. *Sufetula sunidesalis*
Wlk. 1 ex. *Zinckenia fascialis* Cr. 6 ex. *Zinckenia nigerrimalis*
Hmps. 8 ex. *Eurrhyparodes tricoloralis* Zell. 3 ex. *Ercta ornata*
Dup. 3 ex. *Marasmia* sp. 4 ex. *Dichocrocis puntiferalis*
Guen. 4 ex. *Dichocrocis auritincta* Btlr. 7 ex. *Glyphodes holophaealis* Hmps. 6 ex. *Glyphodes negatalis* Wlk. 1 ex. *Glyphodes*
suralis Led. 2. ex. *Glyphodes indica* Saund. 2 ex. *Epipagis*
cancellalis Zell. 1 ex. *Terastia meticulosalis* Guen. 2 ex. *Psara*
licarsialis Wlk. 7 ex.

DIPTERA

Culicidæ. Collection not yet identified.

Bombyliidæ. *Argyramoeba distigma* Wied. var.

Asilidæ. *Promachus* sp., *Laphria nigrocaerulea* Kirb.

Syrphidæ. *Xylota* sp., *Syrphus* 2 spp.

HEMIPTERA HETEROPTERA

Aradidæ. *Brachyrhynchus lignicolus* Kirb.

HEMIPTERA HOMOPTERA

Cicadidæ. *Platyleura calypso* (Kirb.).

Ricaniidæ. *Ricania flavifrontalis* Kirb., *Varcia hyalina*
(Kirb.).

Cercopidæ. *Clovia eximia* Kirb.

Issidæ. ? *Issus* sp.



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6

Frigate Birds and Flying Foxes in flight.

CHRISTMAS ISLAND, INDIAN OCEAN.

NOTES ON SOME REPTILES FROM THE MALAY PENINSULA

NOTE ON PLATE IV

Figs. 1, 2 and 3 are frigate-birds photographed soaring overhead.

Figs. 4, 5 and 6 are of the indigenous fruit-bat (*Pteropus natalis* Thos.).

In Christmas Island the fruit bats are active during the day, even flying in the strong sunlight at noon. Advantage was taken of this fact to photograph them in flight. A favourable situation was found at the top of a cliff about two miles north of Ross Hill. Fruit-trees in bearing were growing at the base of the cliff, and their highest branches reached a level a little below the top. The bats were continually flying round and settling in the trees to feed on the fruit. Fig. 4 shows one soaring with outstretched wings nearly overhead. Fig. 5 shows an individual swooping from behind the cliff-top to the tops of the trees, with the intention of alighting, the photograph being taken when it was almost immediately overhead. As can be seen the thumbs are extended forwards; the wings are partly folded so that the posterior margins are loose, and vibrate with a loud fluttering noise like a flag flying in a strong breeze. Fig. 6 shows a bat that has just checked in its flight preparatory to settling in the top of a tree; it is a little below the level of the observer. At first sight the fact that the thumbs appear below the lower edge of the wing in the photograph make it appear that the anterior margin of the wing has been depressed instead of thrown up as is the rule with animals checking their flight. Probably the truth is that the lower edge in the photograph is actually the posterior margin, the thumbs, when depressed to their full length, being long enough to overlap the wing and appear beyond it.

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